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DPD 6679-59-a

RECENT TECHNICAL PROPOSALS OR IDEAS

Office of Scientific Intelligence Development Projects Division

Boeing (Seattle) Entrance into Reconnaissance: Two (2) representatives of Boeing (Seattle) visited the Agency to inform that Boeing has decided to establish a reconnaissance division (aircraft and satellites) not tied to any missile or other system but rather to concentrate on reconnaissance per se. They advised that Boeing has committed 75-150 professionals and two (2) to five (5) million dollars to this task. The representatives have consulted ARPA, Air Force, and perhaps others to develop a line of effort. They suggest their interest lies in a large satellite with greater camera capability and similar improvements within the "state-of-the-art", such as microwave communications, better ELINT, etc. OSI and DPD (and perhaps others) will keep informed of Boeing progress of this field.

Development Projects Division

Raytheon Airborne Microwave Platform: A copy of the platform proposal by Raytheon to the Air Force has been made available to the offices concerned with collection for possible application of suggested collection or communication techniques. The platform would operate at 65,000 feet powered by microwave energy transmitted from the ground below. This energy would be converted to heat to drive rotor blades keeping the platform aloft. IR, ELINT, and other sensing devices as well as communications equipment would be carried on the platform. The proposal's chief purpose is to participate in early warning and communications involving enemy aircraft and IRBM attack.

Office of Communications

Missile Activity Detection and Analysis Method: The Office of Communications is now considering, primarily with the assistance of OSI and TSS, a possible application of communications techniques to missile detection activity. In essence, the system considers the effects of missile activity on communications links between our communication stations located outside the Soviet Bloc. These links would approximately coincide with Soviet missile paths. A pilot Phase I would precede a fully instrumented Phase II; initial Phase I cost involves $35,000 for antennas and the use of inventory equipment (the antennas will be useful in general communications work).

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ELINT Staff Officer

1. The following excerpt is from the magazine "Missiles and Rockets", 24 August 1959:

> "Predetection recording -- One of the most significant advancements in telemetry reception is that of predetection recording. This technique, first used in the reception of radar signals from Venus by Lincoln Lab's Millstone antenna, offers great promise in higher reliability of telemetered signals. Receiver input is picked off just ahead of the detection stage, tape recorded then later demodulated.
>
> "The advantage here is in the possibility of applying advanced demodulation techniques to periods in which data are lost due to poor signal - to - noise ratio of interference. Future improvements in this technique are expected to significantly advance long-range telemetry.
>
> "Radiation, Inc., has designed and built models of a 2200 mc 'state-of-the-art' receiver which provide this feature. Production of commercial models is contemplated."

2. This type of receiver could possibly be used either on the ground or in an airborne platform and will be investigated for possible use as an ELINT telemetry receiver.